

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A perpendicular magnetic recording disk for use in perpendicular magnetic recording, said perpendicular magnetic recording disk characterized by comprising a substrate, a soft magnetic layer of a material selected from a group consisting of an Fe-based material and a Co-based material on said substrate, and a magnetic recording layer on said soft magnetic layer, wherein said magnetic recording layer comprises a ferromagnetic layer on said soft magnetic layer, having a granular structure, and comprising crystal grains mainly made of cobalt (Co) and grain boundary portions mainly made of SiO₂ and a layer, on said ferromagnetic layer, having no granular structure and comprising a material selected from a group consisting of CoCrPt, CoPt, CoPd, FePt, CoPt₃, and CoPd₃, the content of the SiO₂ in said ferromagnetic layer being 6at% or more, said perpendicular magnetic recording disk comprising, on said substrate, said soft magnetic layer, said ferromagnetic layer having the granular structure, and said layer having no granular structure in this order; wherein a spacer layer selected from a group consisting of a Pd layer and a Pt layer is provided between said ferromagnetic layer and said layer having no granular structure and comprising the material selected from the group consisting of CoCrPt, CoPt, CoPd, FePt, CoPt₃, and CoPd₃.

2. - 5. (canceled).

6. (currently amended) A method of manufacturing a perpendicular magnetic recording disk for use in perpendicular magnetic recording and having at least a soft magnetic layer of a material selected from a group consisting of an Fe-based material and a Co-based material on a substrate and a magnetic recording layer on said soft magnetic layer, said method characterized by,

in a step of forming said magnetic recording layer comprising, on said soft magnetic layer, a ferromagnetic layer of a granular structure comprising SiO₂ between crystal grains comprising cobalt (Co), the content of the SiO₂ in said ferromagnetic layer being 6at% or more,

and a layer, on said ferromagnetic layer, having no granular structure and comprising a material selected from a group consisting of CoCrPt, CoPt, CoPd, FePt, CoPt₃, and CoPd₃, forming said ferromagnetic layer on said soft magnetic layer by sputtering in an argon gas atmosphere and then forming said layer having no granular structure and comprising the material selected from the group consisting of CoCrPt, CoPt, CoPd, FePt, CoPt₃, and CoPd₃ by sputtering in an argon gas atmosphere at a gas pressure lower than a gas pressure used when forming said ferromagnetic layer,

said method thereby manufacturing said perpendicular magnetic recording disk comprising, on said substrate, said soft magnetic layer, said ferromagnetic layer having the granular structure, and said layer having no granular structure in this order,

said method further characterized by providing a spacer layer selected from a group consisting of a Pd layer and a Pt layer between said ferromagnetic layer and said layer having no granular structure and comprising the material selected from the group consisting of CoCrPt, CoPt, CoPd, FePt, CoPt₃, and CoPd₃.

7. - 10. (canceled).

11. (previously presented) A perpendicular magnetic recording disk according to claim 1, further comprising an underlayer including Ru provided between said soft magnetic layer and said ferromagnetic layer.

12. (currently amended) A method of manufacturing a perpendicular magnetic recording disk for use in perpendicular magnetic recording and having at least a soft magnetic layer of a material selected from a group consisting of an Fe-based material and a Co-based material on a substrate, an underlayer including Ru on said soft magnetic layer, and a magnetic recording layer on said underlayer, said method characterized by,

in a step of forming said magnetic recording layer comprising, on said underlayer, a ferromagnetic layer of a granular structure comprising SiO₂ between crystal grains comprising cobalt (Co), the content of the SiO₂ in said ferromagnetic layer being 6at% or more, and a layer, on said ferromagnetic layer, having no granular structure and comprising a material selected from a group consisting of CoCrPt, CoPt, CoPd, FePt, CoPt₃, and CoPd₃, forming said

ferromagnetic layer on said underlayer by sputtering in an argon gas atmosphere and then forming said layer having no granular structure and comprising the material selected from the group consisting of CoCrPt, CoPt, CoPd, FePt, CoPt₃, and CoPd₃ by sputtering in an argon gas atmosphere at a gas pressure lower than a gas pressure used when forming said ferromagnetic layer,

said method thereby manufacturing said perpendicular magnetic recording disk comprising, on said substrate, said soft magnetic layer, said underlayer, said ferromagnetic layer having the granular structure, and said layer having no granular structure in this order,

said method further characterized by providing a spacer layer selected from a group consisting of a Pd layer and a Pt layer between said ferromagnetic layer and said layer having no granular structure and comprising the material selected from the group consisting of CoCrPt, CoPt, CoPd, FePt, CoPt₃, and CoPd₃.